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ABSTRACT

School principals are called to be lifelong learners. The advancements of technology require school leaders to participate in ongoing education to remain skilled in and informed about technology usage. This article first provides a literature review, discussing the need for continuing education in technology for school administrators as lifelong learners. Secondly, it discusses the types of technology education principals want, based on data generated from 100 elementary, middle, and secondary school principals from 23 school districts in Texas. Thirdly, it describes the types of software (i.e., word processing, presentation, spreadsheet, database, Internet, and e-mail) available to meet technology needs of school leaders. Lastly, the article discusses the implications of this study in establishing professional development programs in technology education for school leaders. (Contains 21 references.) (Author/AEF)

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Technology Education that School Principals Want

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Abstract: School principals are called to be lifelong learners. The advancements of technology require school leaders to participate in ongoing education to remain skilled in and informed about technology usage. This article will first provide a literature review discussing the need for continuing education in technology for school administrators as lifelong learners. Secondly, it will discuss the types of technology education principals want, based on data generated from 100 elementary, middle school, and secondary principals. Thirdly, it will describe the types of software available to meet technology needs of school leaders. Lastly, this article will discuss the implications of this study in establishing professional development programs in technology education for school leaders.

School Principals as Lifelong Learners

Lifelong learning should be a practice exercised by all people (Organization for Economic Cooperation and Development, 1996). Niemi (1972) states that lifelong learning incorporates both the processes of learning by design and by chance, and it should not be equated with lifelong schooling. Lifelong schooling implies compulsory education, not allowing the adults to choose the educational areas and approaches to meet their learning needs and styles. Lifelong learning should be designed to meet adult learners' specific, lifelong educational needs for both professional and personal growth (Chickering, 1994; Cross, 1995), serving as a means for self-renewal in an ever-changing world (Collinson, Sherrill, & Hohenbrink, 1994).

School principals are to be continual or lifelong learners (National Association of Elementary School Principals, 1986). In responding to the need for campus leaders to be lifelong learners, the Texas State Board of Educator Certification (1998) proposal provides minimum requirements of continual education for school administrators to maintain their principal certification in the State of Texas. In outlining goals for the restructuring of high schools in the United States, members of the National Association of Secondary School Principals (1996) placed the need for professional development of school educators as one of the nine educational priorities. School administrators and teachers need to model lifelong learning if students are to comprehend the meaning of education (Bush, 1998). For example, Carter (1997) points out that principals must serve as role models for technology usage. The shortened life cycle of technology requires school administrators to maintain lifelong learning (Jones, 1997). Moreover, this ongoing education can strengthen school administrators' "lifelong employability," providing them ongoing productivity and employment, which may not be guaranteed by earlier education (McKenzie & Wurzburg, 1997).

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Technology Education for School Administrators

A critical component of principals' professional development is familiarity with technology for both instructional and administrative usage (Beckner, 1990). The professional preparation program should ensure that school administrators are able to demonstrate competencies based on the International Society for Technology in Education (ISTE) guidelines (*Regional Collaborative Center for Professional Development and Technology Proposal,* 1992, p. 4B-6-7). Guidelines include being able to "demonstrate the ability to operate an information system to successfully utilize software; evaluate and use computers and related technology to support the instructional process; and explore, evaluate, and use computer/technology-based materials, including applications, educational software, and associated documentation," to name a few (*Regional Collaborative Center for Professional Development and Technology Proposal,* 1992 p. 4B-6). The Commission on the Restructuring of the American High School pointed out that a high priority for the high school of the 21st century is electronic learning (National Association of Secondary School Principals, 1996). Consequently, as campus leader and role model to students and staff, principals need to be familiar with technology usage to apply it effectively. Thus, principals need to be provided the training and resources to become proficient in technology (Carter, 1997).

Collaboration of Schools & Colleges/Universities to Provide Technology Education

Public school and higher education officials need to collaborate in providing meaningful technology education programs to meet principals' needs (Kajs, Willman, & Alaniz, 1998). Ties with higher education are needed (National Association of Secondary School Principals, 1996), especially since professors of education believe in the values of lifelong learning for school educators (Lewis, 1997). Colleges and universities should look at establishing principal academies, which focus on the specific needs of principals, since they can serve as a viable vehicle for the ongoing professional development of school leaders (Behar-Horenstein, 1995).

In his study of principals' use of technology, i.e., e-mail, Carter (1997) found three predictors that determined usage—computer experience, training, and available resources. Consequently, professional programs in technology for school principals should be developed based on their knowledge base and job-related context of technology (McKenzie & Wurzburg, 1998). In developing an educational program for principals, a questionnaire or survey should be used to ascertain information about their technology interests and needs (Schmuck & Runkel, 1994). Ongoing feedback from principals during the professional development program can provide opportunities to adjust the program to ensure relevance of information (Nelson & Quick, 1997; Schmuck & Runkel, 1994). University faculty should develop a learning process that not only provides technology skills to be effective in job-related activities but also creates a "passion" for technology usage by setting up situations in which principals find solutions for self-selected school dilemmas (Eden, Eisenberg, Fischer, & Repenning, 1996). This passion can serve as motivation for continued, lifelong learning (Eden et al., 1996).

Research Study

To ascertain campus administrators' continuing education needs in technology, 100 elementary, middle school, and secondary principals from 23 school districts in Central, South, and East Texas were provided a questionnaire. The questionnaire asked them to indicate the types of technology education they wanted to meet lifelong learning goals. Fifty-one percent (51%) of the one hundred principals were from the elementary level, 29% held middle school campus positions, 18% were high school administrators, and two percent 2% were from campuses with both elementary and middle school grades. The questionnaire asked, "What technology education would you want to meet lifelong learning needs? Circle your preferences and/or add ones you would want." The preferences included six types of computer applications: (a) word processing, (b) presentation, (c) spreadsheet, (d) web site, (e) Internet and e-mail,

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and (f) database. The questionnaire also asked principals to list other types of software application/technology they desired to learn.

The following results, in percentages, indicate the responses of the 100 principals to the six areas of continuing education: (a) word processing, (46%), (b) presentation (63%), (c) spreadsheet (49%), (d) web site (37%), (e) Internet and e-mail (70%), and (f) database (59%). Six percent of the principals noted additional types of technology/software applications, including communications, digital camera, virus protection, scanners, project management, conflict matrix, decision-making, evaluation, curriculum, and distant learning.

Types of Software Available in Six Areas and Their Applications

Software products can be found in the six identified areas of computer application to assist principals in using technology for administrative and instructional tasks. Along with a short description of each of the six application areas, a few examples of software products are provided.

Word Processing

Word processing software is intended to provide easy production of text-based documents with ease-of-use features such as formatting and the manipulation of fonts and graphics. Modern word processing products have spell checking and thesaurus capabilities as well. Most word processors are able to export HTLM documents that can be read by web browsers. Typical uses of word processing include letters, memoranda, journal articles, announcements, notices, and flyers.

1. Corel WordPerfect Suite (Wordperfect) http://www.wordperfect.com/
2. Lotus SmartSuite (WordPro) http://www.lotus.com/
3. Microsoft Office (Microsoft Word) http://www.microsoft.com/word/
4. AppleWorks (Word processor) http://www.apple.com/appleworks/

Presentation

Presentation software is intended to ease the preparation for presentation to groups of people. The software allows standardized formats, backgrounds and colors, animations, and other visual effects to be rapidly produced. Not only can results be used on electronic projection equipment, but they can also be displayed on colored overhead transparencies and handouts. As with word processors, modern presentation software can export HTML files for web use. Typical uses of presentation software include in-service education or training, conference presentations, and information delivery to teachers, staff, parents, and community members.

1. Gold Disk (Astound) http://www.golddisk.com/
2. Lotus SmartSuite (Freelance) http://www.lotus.com/
3. Microsoft Office (Microsoft PowerPoint) http://www.microsoft.com/powerpoint/
4. Corel WordPerfect Suite (Presentations) http://www.wordperfect.com/

Spreadsheet

Spreadsheets are a form of electronic calculator. Data are arranged in rows and columns that may be manipulated arithmetically and statistically. Spreadsheets are used instead of databases when the primary content is numerical and calculations are frequent. Results are displayed in textual or tabular format as well as graphically using business charts. Most spreadsheets can export HTML for web use.

Typical uses of spreadsheets include budget preparation, analysis of standardized testing, and demonstrations of possible relationships between variables.

1. Corel WordPerfect Suite (Quattro Pro) http://www.corel.com/products/wordperfect/cqp8/index.htm
2. Lotus SmartSuite (Lotus 1-2-3) http://www.lotus.com/
3. Microsoft Office (Microsoft Excel) http://www.microsoft.com/excel/
4. SAS (Calc) http://www.sas.com/software/components/calc.html
5. AppleWorks (Spreadsheet) http://www.apple.com/appleworks/

Database

A large overlap exists between function and capability of spreadsheets and database technology. In general, databases are optimized to store and retrieve textual data, while spreadsheets are optimized to do calculations. Many database products can export HTML. Typical uses of databases include storage of student information and data, inventory data, and other textual information. It is common to combine the word processing and database to mail merge personalized letters to parents, teachers, or other groups.

1. Corel (Paradox) http://www.corel.com/products/wordperfect/paradox8/index.htm
2. Lotus SmartSuite (Approach) http://www.lotus.com/
3. Microsoft Office (Microsoft Access) http://www.microsoft.com/access/
4. AppleWorks (Database component) http://www.apple.com/appleworks/

Internet: Web Site Preparation and Browsers

Web browsers permit personal computer users to visualize data located in millions of other computers around the world. The structure usually begins with a home page with links to other pages. The web information is stored in Hypertext Markup Language (HTML), which can be produced by web editing software or in many cases other applications such as word processors. Web editors and other site preparation and management software work with the HTML. A school web site is typically used as a community bulletin board and a source of public relations information, as well as an opportunity to post special issues of interest to parents and to showcase student work.

1. Macromedia (DreamWeaver) http://www.macromedia.com/software/dreamweaver/ (preparation)
2. Microsoft Front Page http://www.microsoft.com/frontpage/ (preparation and site management)
3. Microsoft Internet Explorer http://www.microsoft.com/ie/ (browser)
4. Netscape Communicator http://www.netscape.com/download/ (preparation and browser)
5. Sausage Software (Hot Dog) http://www.sausage.com/ (preparation)
6. Adobe Software (PageMill) http://www.adobe.com/prodindex/pagemill.html (preparation and site maintenance)

E-Mail

Electronic mail is a means of asynchronous textual/graphic communications. It is an electronic analog of regular paper mail. The sender must know the electronic address of the recipient, just like one must know the address of the recipient to send a letter. E-mail can be sent to one person as well as to many individuals on a distribution list. Typically e-mail is used for quick informal communications, bulk distribution of notices, changes in standard schedules, and so forth. An advantage of e-mail is that the recipients can respond rapidly to the sender, so a quick on-line survey or poll could be easily implemented.

1. Lotus (cc:Mail) http://www.lotus.com/

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2. Microsoft Outlook/Exchange http://www.microsoft.com/outlook/
3. Netscape Communicator http://www.netscape.com/download/ (e-mail)
4. QualComm (Eudora Pro) http://www.qual.comm.com/
5. Numerous self-contained e-mail systems like America On-Line (http://www.aol.com) and Juno (http://www.juno.com), Netscape, Yahoo, Hotmail, and many more.

Conclusion

Because of the campus leadership role and its accompanying responsibilities, school principals are required to be continual or lifelong learners. Public school administrators and higher education instructors need to collaborate to provide principals relevant technology education and training. In developing a continuing education program for school leaders, principals' instructional needs and computer experience must first be assessed, as well as principals' access to the necessary technology resources (Carter, 1997). During the continuing education sessions, informal formative assessments can provide useful feedback on the relevance of instruction to principals (Nelson & Quick, 1997; Schmuck & Runkel, 1994).

Questionnaire results reported in this article indicate that principals want technology education in all six areas, but especially in Internet and e-mail usage, and presentation and database applications. A variety of software applications are available for the administrative and instructional needs of campus leaders. A small percentage of principals also addressed other computer technology needs. Further exploration into school administrator needs should incorporate these technology/software elements. For instance, a category entitled "utility or special purpose software" incorporating campus planning (e.g., Project '98) and grade/portfolio management (e.g., Grady Profile) should be included. Other considerations in developing continuing education programs for principals would include the length and timing of sessions, as well as the creative handling of instructional sessions with participants who have varying computer experiences and instructional needs.

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